

No. 725,493.

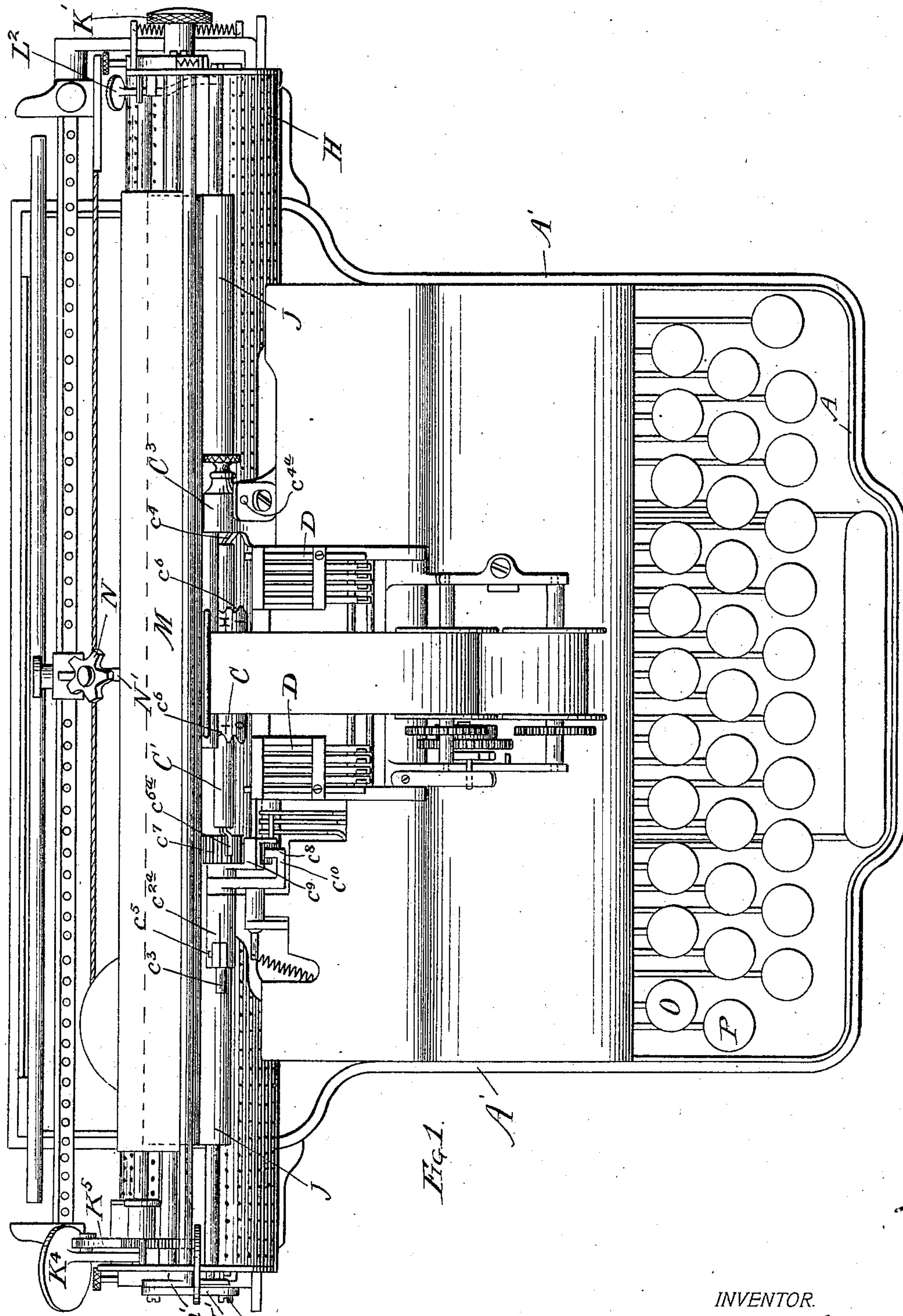
PATENTED APR. 14, 1903.

S. J. SEIFRIED.
TYPE WRITER.

APPLICATION FILED SEPT. 14, 1901.

NO MODEL.

6 SHEETS--SHEET 1.



WITNESSES
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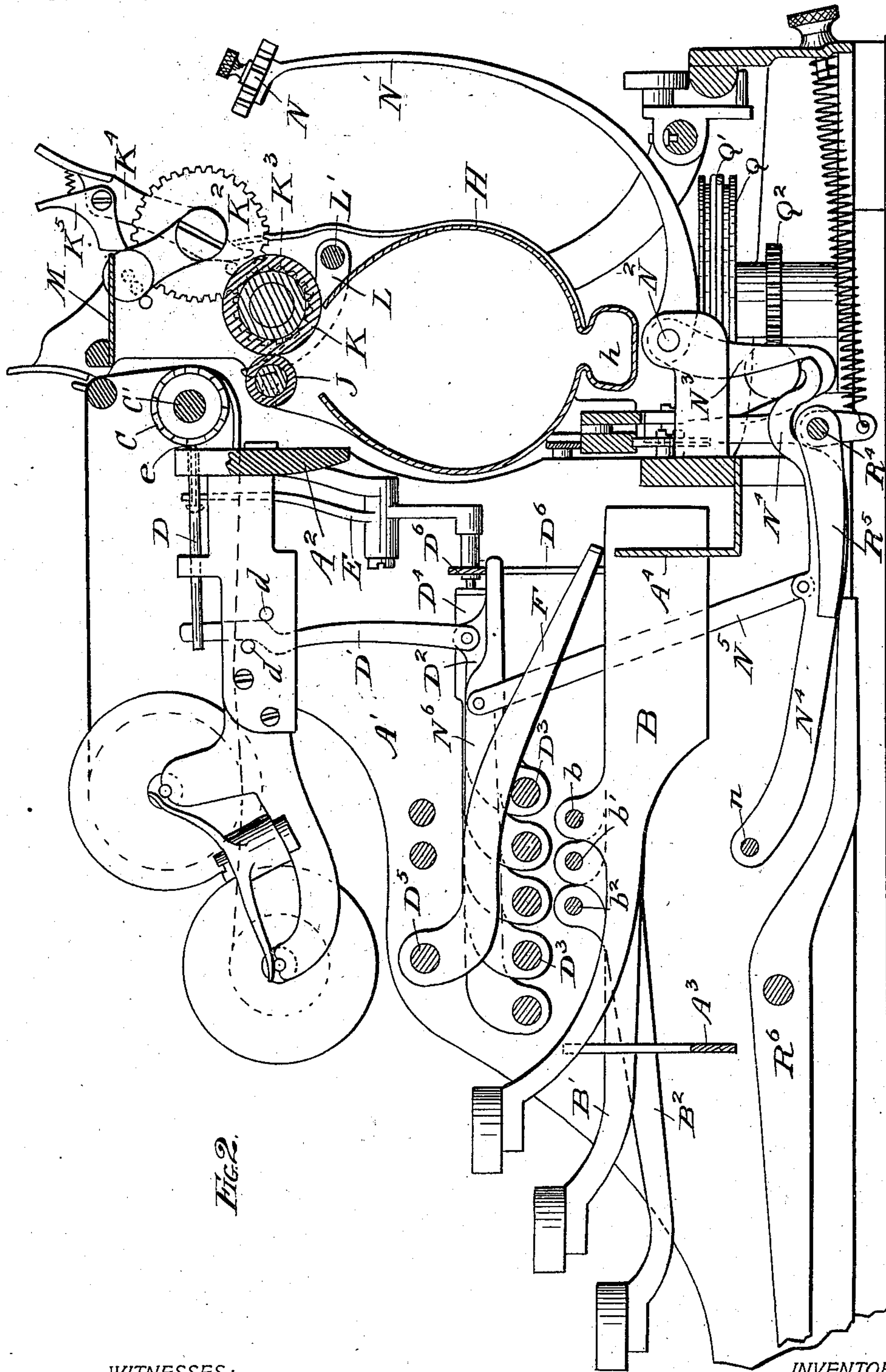


FIG. 2.

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6 SHEETS—SHEET 3.

Fig. 4.

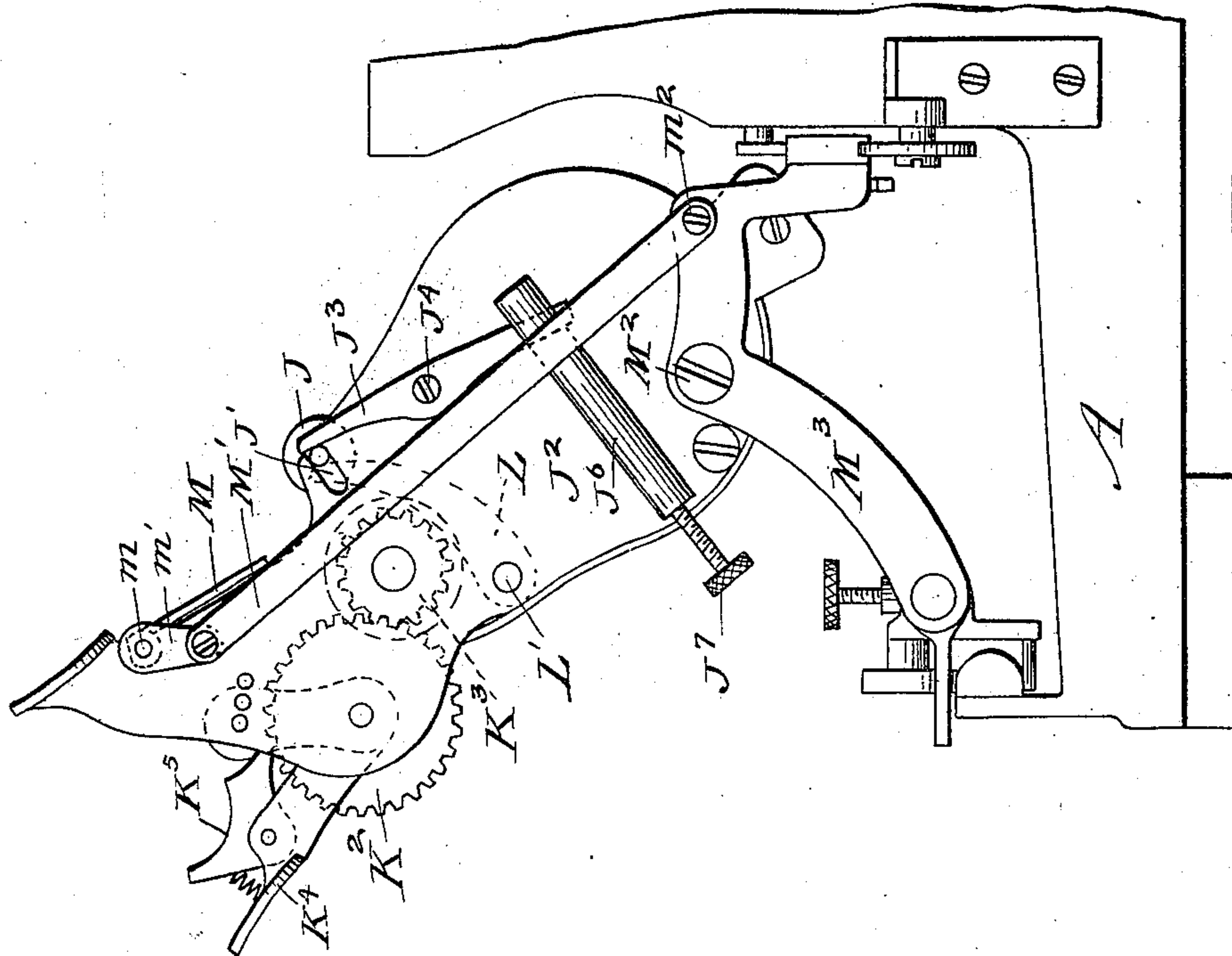
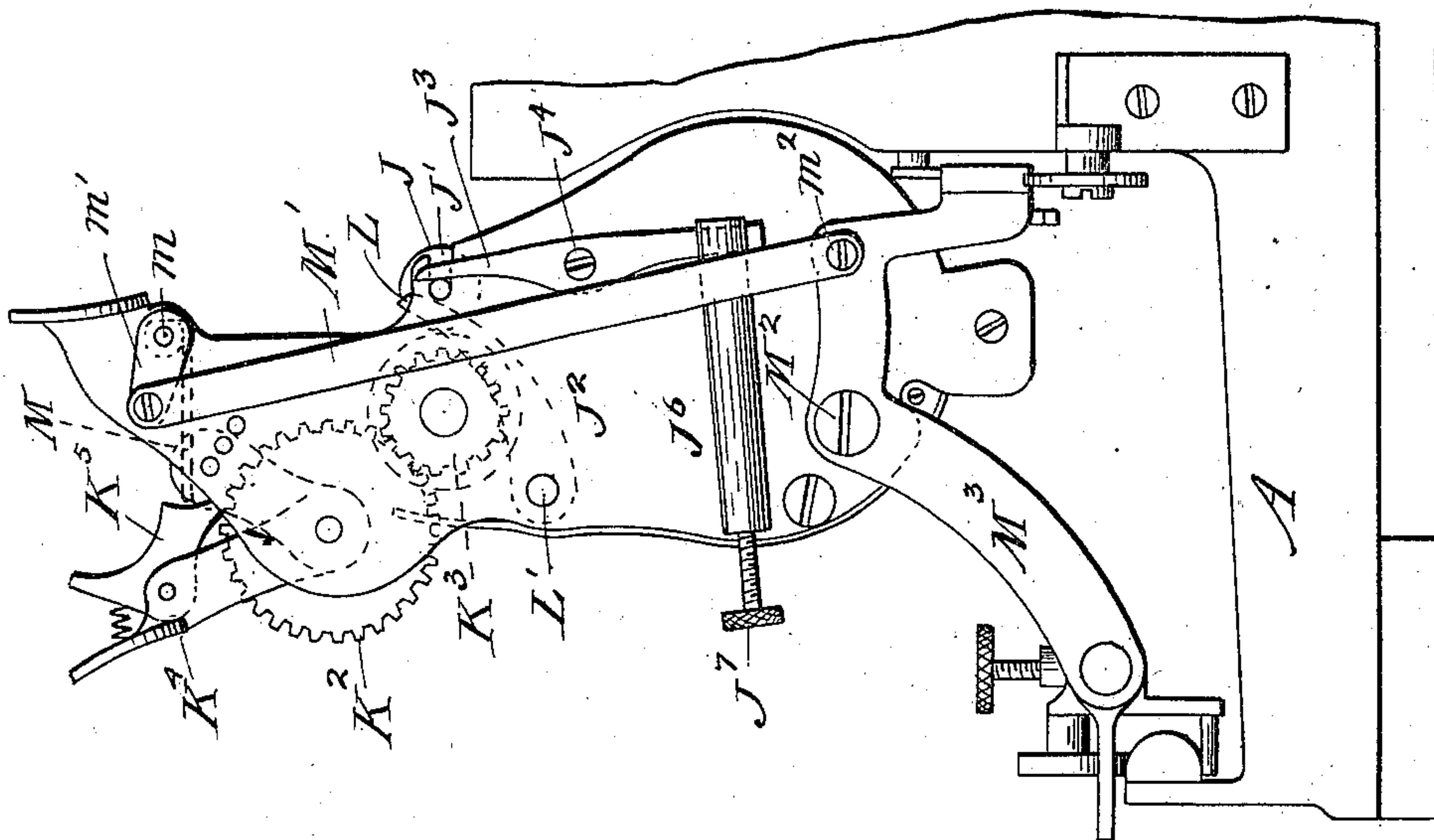


Fig. 3.



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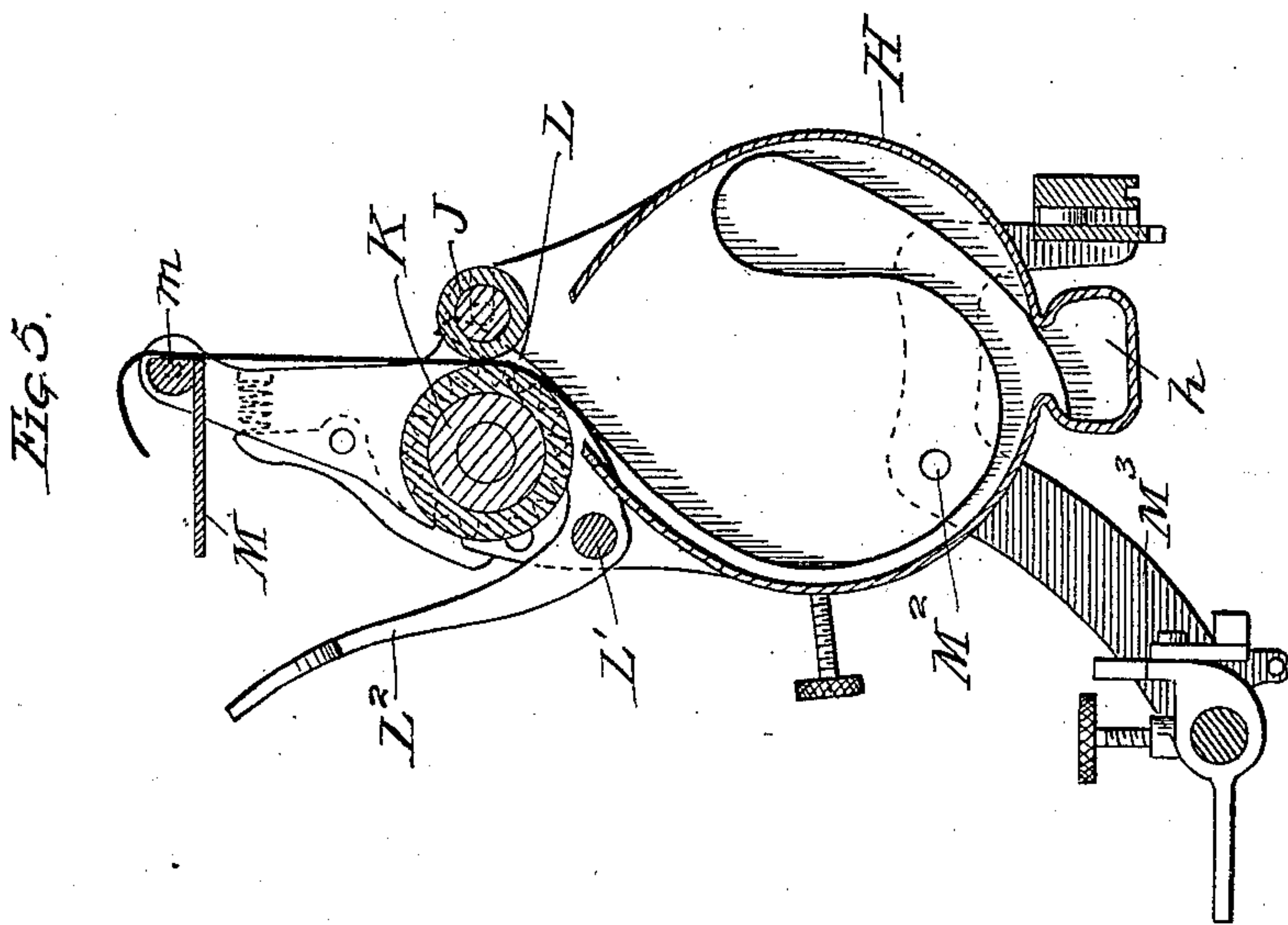
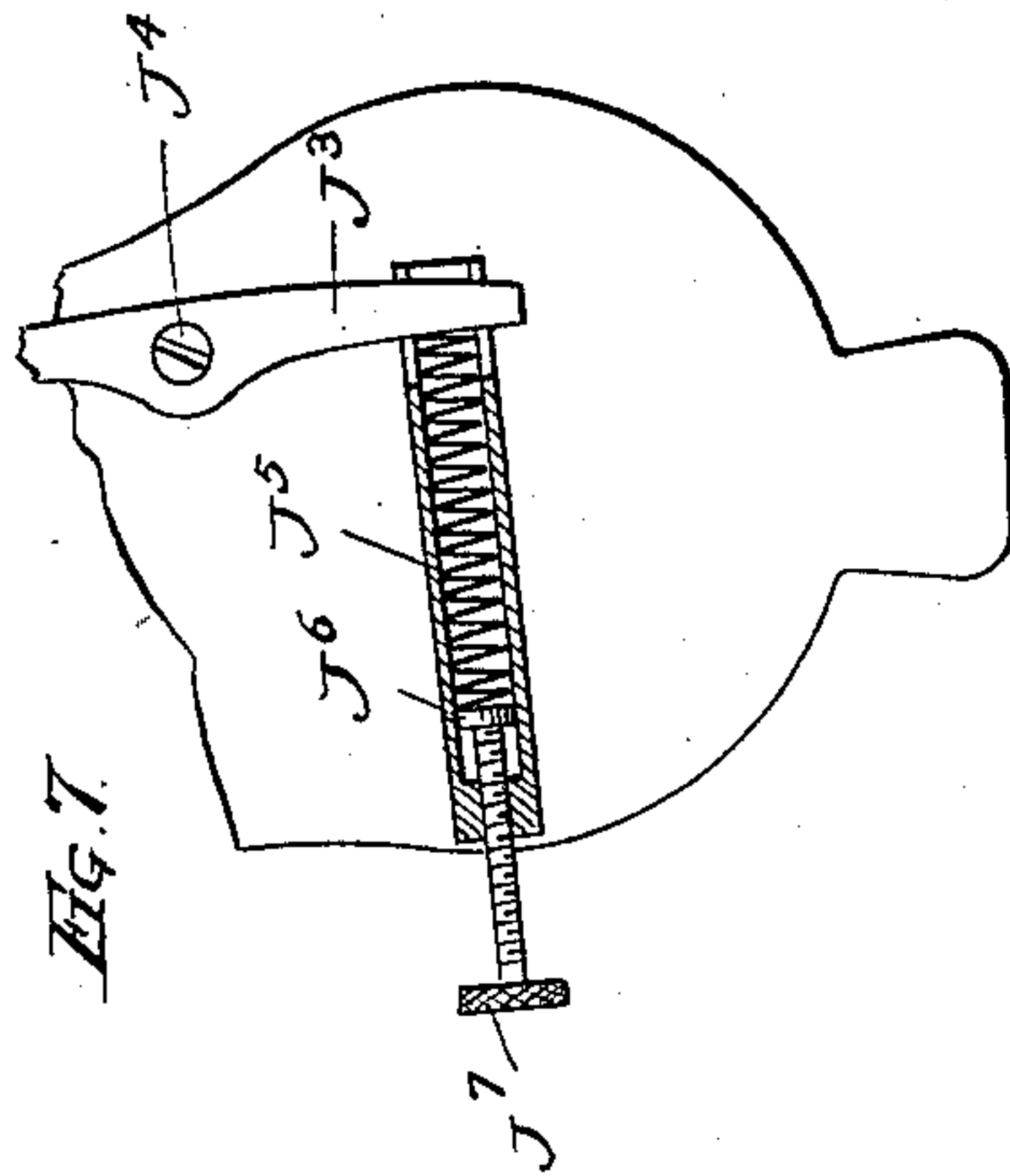
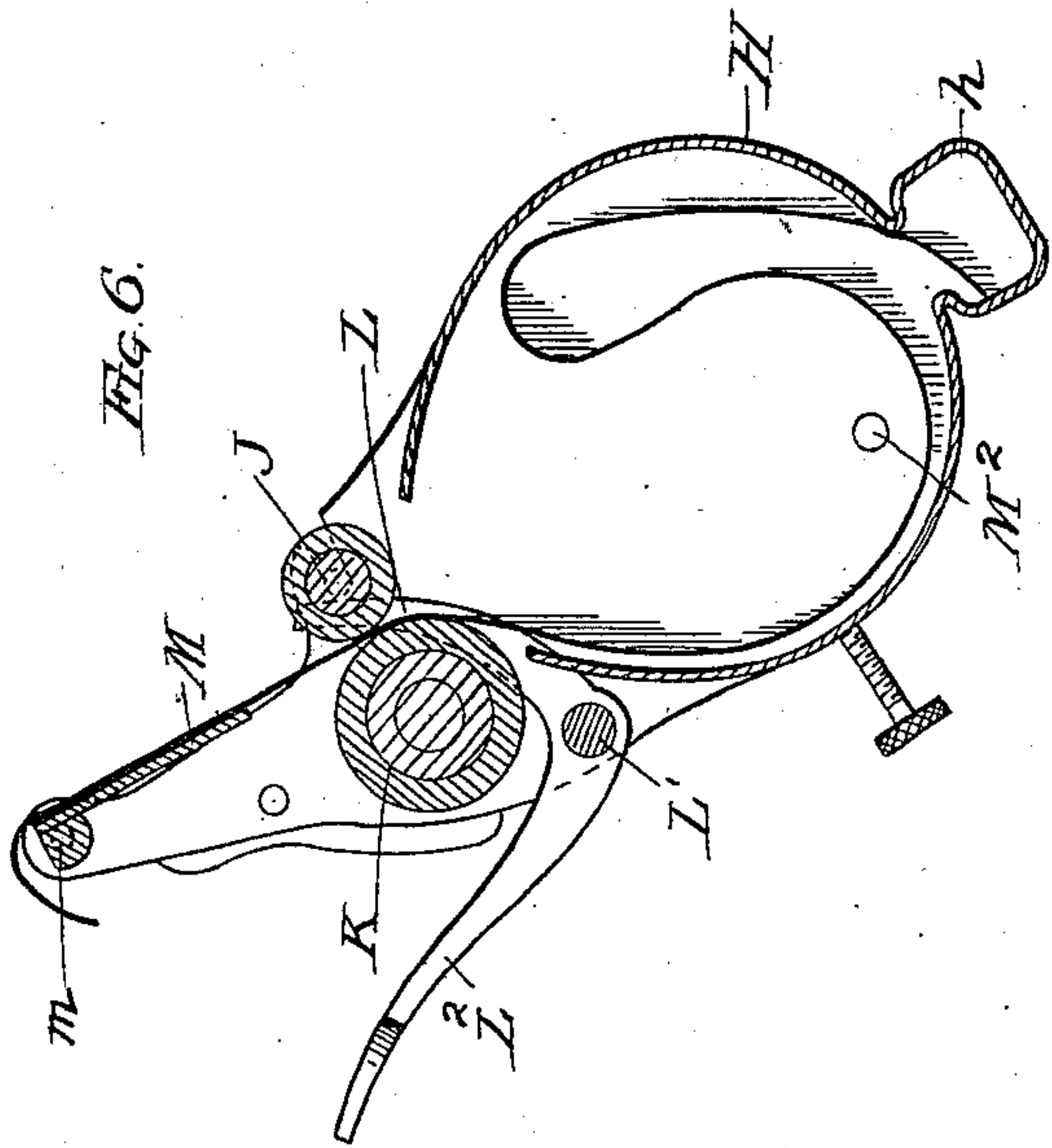
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5 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

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TYPE-WRITER.

SPECIFICATION forming part of Letters Patent No. 725,493, dated April 14, 1903.

Application filed September 14, 1901. Serial No. 75,390. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL J. SEIFRIED, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Type-Writers, of which the following is a specification.

This invention relates to improvements in type-writers, and more especially in the paper-carriages of such machines.

One feature of the invention is found in the provision upon the paper-carriage of a storage-receptacle for the paper, such receptacle being open along its top line for the insertion of the sheet and having a longitudinal groove, depression, or enlargement along its bottom adapted to receive the lower edge of the paper and to prevent any tendency of such edge to turn or curl up under the pushing power applied to the sheet in forcing it into the receptacle.

Other features of the invention relate specially to the construction of the carriage-escapement devices, the tension devices regulating the motor-spring for sliding the carriage, and the arrangement of the stop-pins for limiting the reciprocating movements of the type-cylinder.

In the accompanying drawings, Figure 1 is a plan view, and Fig. 2 a vertical section, of a type-writer embodying my present improvement. Figs. 3 and 4 are end views of the carriage in different positions. Figs. 5 and 6 are vertical cross-sections of the carriage in different positions of the latter. Fig. 7 is a partial elevation of the carriage, partly in section. Fig. 8 is a plan, and Fig. 9 a section on the line 9 9 of Fig. 8, of the carriage and motor devices. Fig. 10 is an elevation of the escapement, and Fig. 11 is a sectional view at right angles to Fig. 10. Figs. 12 and 13 are views similar to Figs. 10 and 11, showing the parts in different positions. Fig. 14 is a side elevation of the mechanism for rotating the type-cylinder, and Fig. 15 is a longitudinal section of the type-cylinder.

In the drawings, A represents the frame of the machine, having side pieces or wings A' in which the main shafts may be pivoted or supported, a cross-bar A², connecting said

wings at the top, and front and rear combs or slotted plates A³ A⁴ to serve as guides for the key-levers.

B, B', and B² represent the character-keys and their respective levers. The keys are arranged in three transverse rows, and the levers for the three rows are pivoted to shafts b b' b², respectively.

C is the rotary sliding type-cylinder, furnished with an annular groove c near its middle to receive the arm e of the lever E, by which the sliding movement is communicated, and with a longitudinal inner groove c' to give room to the feather c² upon the shaft C', whereon the sleeve is mounted and supported. This shaft is suspended upon the pointed ends of two pivots c³ and c⁴, arranged in line with the shaft, and of these the one marked c³ is secured in a bearing, split for a portion of its length and provided with a tightening-screw c⁵. The bearing C³ of pivot c⁴ may have a detent c^{4a} to engage with said pivot, and the latter may have a milled head, as shown. In my former machines the feather was formed upon the inside of the sleeve, and consequently was near the axis of the shaft, so that any looseness between it and the groove in the shaft was multiplied at the surface of the sleeve, causing imperfection in the alinement of the printed characters. By the change which I have made in the location of the feather and groove they are now nearer the surface and farther from the axis, so that the looseness referred to affects the alinement much less than with the other construction.

In addition to the parts above mentioned I have shown other parts of the printing mechanism; but as the present invention is independent of the particular mechanism I do not describe them nor illustrate them fully. They are, however, almost identical with the corresponding parts of my Patent No. 474,350, of May 3, 1892.

The paper-carriage of my improved type-writer is provided with a paper-storage receptacle H, arranged longitudinally of the carriage and below the plane of the printing-center. The receptacle is open at the top, and the paper-feed rolls J and K are placed

just above the opening, so they may serve as guides in inserting the paper and so they may also be used in pushing the paper down into the receptacle. This receptacle differs from former constructions in that it is provided with a bottom longitudinal groove h , the mouth of which is somewhat contracted. This groove is so located as to insure the entrance within it of the lower edge when the paper is first inserted within the receptacle, and by contracting the mouth of the groove said lower edge is prevented from any tendency which may be communicated to it by the forcing of the sheet into the receptacle to turn upward toward the feed-rolls.

Of the feed-rolls that marked K is journaled in stationary bearings in the end plates of the carriage and is provided with a milled head K' , whereby it may be turned at pleasure. This roller also receives the line-spacing actuations through the gear K^2 and pinion K^3 from the finger-lever K^4 , having a pawl K^5 meshing with said gear.

The movable roller J is journaled in horizontal slots J' , open at one side, in the end plates J^2 of the carriage and is confined therein by the upper ends of levers J^3 , pivoted at J^4 and provided with springs J^5 , confined in barrels J^6 , attached to the end plates and pressing against the lower ends of the levers. The power of springs J^5 is regulated by set-screws J^7 .

The feed-rolls J and K may be forced apart and held out of contact during the insertion of the paper by levers L , rigid upon the shaft L' and operated by the finger-lever L^2 . The points of levers L press against the journal of roller J and are so shaped that when they have forced the roller away from its acting position they will retain it in the changed position notwithstanding its tendency to return under power of springs J^5 .

I also provide the paper-carriage with an erasure-plate M , which swings into position so it will sustain the paper along the line which is being printed whenever the carriage is tipped back, thus avoiding all necessity for moving the paper to bring it over the plate preparatory to making erasures. This movability of the plate is necessary, of course, to avoid interference with the printing operation, and I make it automatic by supporting the plate upon pivots m at its ends and connecting it by a crank m' and rod M' , pivoted at m^2 to a stationary part of the machine, so that when the carriage is tipped back from the printing-point upon its pivots M^2 , sustained in the end pieces M^3 of the bottom frame, the plate will be rocked from a horizontal position (shown at Figs. 3 and 5) to a vertical one. (Shown at Figs. 4 and 6.) In the latter position it is directly behind the line being printed, so that correction can be made without moving the paper at all. The returning of the carriage to its normal or printing position rocks the erasure-plate to its elevated position, in which it is entirely out of

the way of the hammer or other printing devices.

The printing-hammer N may be secured to a lever N' , mounted upon a rock-shaft N^2 , located under the paper-storage receptacle, as shown. This requires considerable length in the lever and permits a stroke long enough to render the hammer effectual in manifolding. The lever is curved so it may not interfere with the receptacle, and it is actuated by the slotted cam N^3 , the lever N^4 pivoted at n and engaging said cam and receiving its impulses from the connecting-bar N^5 and lever N^6 upon shaft D^5 .

The feeding movements of the paper-carriage are due to the horizontal spring-actuated pulley Q and the cord Q' , connecting the pulley with the carriage and adapted to be wound upon the pulley. The spring q furnishing the power is located inside the pulley and coiled around its axis q' , and its tension is regulated by a worm-gear Q^2 , keyed to the pulley-axis and meshing with a worm Q^3 , the axial line whereof is horizontal. The worm is furnished with a thumb-nut q^3 , whereby it may be actuated readily and easily, and any adjustment effected by it is automatically retained.

The escapement-lever for controlling the feed of the carriage is composed of the lever R and the pawl R' , mounted and pivoted on the lever. The pawl is made in one piece of metal and alternates with the point r of the lever in locking the rack in the usual manner. The pawl is moved into position for fresh engagement with the rack—that is to say, from the position shown at Fig. 10 to that shown at Fig. 12—by a spring R^2 . This spring being forced from its normal position in Fig. 12 by power from the carriage, which carries the pawl against the stop r' , is ready whenever the pawl is released to turn it to the position given at Fig. 10. A companion spring R^3 , located at the other side of the pawl from that at which spring R^2 is located, is employed simply to retain the control of the pawl and prevent its swinging too far either under the power of spring R^2 or by its contact with the rack when the carriage is moved back preparatory to starting a fresh writing-line. The lever R is mounted upon the rock-shaft R^4 , actuated through the arm R^5 , the front end of which is lifted at each impression, and also by the spacing-lever R^6 .

I do not claim herein the swinging erasure-plate broadly, nor do I claim, broadly, the means whereby it is automatically operated, but reserve such claims for a copending application, Serial No. 67,914, filed July 11, 1901.

I claim—

1. In a type-writer, a paper-carriage having an inclosed paper-storage receptacle provided with a longitudinal groove, depression or enlargement at its bottom adapted to engage and retain the lower edge of the paper, substantially as specified.

2. In a type-writer, a paper-carriage hav-

ing an inclosed paper-storage receptacle provided with a longitudinal groove, depression or enlargement at its bottom, said groove having a contracted mouth whereby it is adapted
5 to engage and retain the lower edge of the paper, substantially as specified.

3. The paper-carriage adapted to tip, the swinging erasure-plate mounted thereon, the

crank attached to the plate and the rod M' connecting the crank with a stationary part 10 of the machine, substantially as specified.

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Witnesses:

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